

Ian Shanahan (1988–1991)

– *To Eric Gross and Peter Sculthorpe*

For Roslyn Dunlop, Daryl Pratt and Tony Cowdroy to play:

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# *Cycles of Vega*

for

sopranino clarinet in e $\flat$

and

percussion (2 players)

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PROGRAMME ANNOTATION

Cycles of Vega

for e♭ clarinet and percussion

Ian Shanahan (1988–1991)

In what may well become an ever-expanding set of compositions for wind and percussion instruments, **Cycles of Vega** is intended to be a 'companion piece' to an earlier work of mine: **Echoes/Fantasies** (1984), for bass clarinet, vibraphone(s) and tubular bells. Both of these compositions make use of various complex long-range cyclic transformations – hence the present work's name – as well as embracing related musical materials and structures.

The title "Cycles of Vega" makes oblique reference to my longstanding astronomical interests. Vega (α Lyrae), the brightest object in the 'musical constellation' Lyra, will become the Earth's north celestial pole-star sometime around 14,000 AD – since Earth's polar axis inexorably describes, or cycles through, a vast circle in the sky every 25,800 years or so. Considered to be the greatest astronomer of antiquity and the founder of systematic observational astronomy, Hipparchos of Nicaea (fl. 146–127 BC) was allegedly the discoverer of this diurnal cosmic process (referred to as 'precession') – although an explanation of precessional behaviour was not forthcoming for at least another 1,800 years, with the advent and codification of Newtonian mechanics! (Rotating bodies then perhaps began to be understood, a little...) At any rate, the (epi)cyclicity discernible within **Cycles of Vega** is certainly a 'precessional metaphor'. Intended to proclaim our Universe's grandeur, I trust that **Cycles of Vega** is not just some lifeless 'acoustical orrery', but is, rather, a truly vibrant model of the Cosmos it extols.

Much to my delight, I have learnt that the star Vega possesses a rich cultural history; its name is resonantly polysemic. According to Richard Hinckley Allen:*

The association of Lyra's stars with a bird perhaps originated from a conception of the figure current for millenniums in ancient India – that of an Eagle ... But the Arabs' title, *Al Nasr al Waki* – Chilmead's *Alvaka* – referring to the swooping Stone Eagle of the Desert, generally has been attributed to the configuration of the group α, ε, ζ [Lyrae], which shows the bird with half-closed wings ... Sayce identifies Vega, in Babylonian astronomy, with *Dilgan*, the Messenger of Light ... Owing to precession, it will be the Polaris of about 11,500 years hence, by far the brightest in the whole circle of successive pole-stars, and then 4.5" from the exact point, as it was about 14,300 years ago ... [Vega] was the first star submitted to the camera, by the daguerreotype process, at the Harvard Observatory on the 17th of July, 1850.

Moreover, the theologian E. W. Bullinger claims that the star-name Vega "means *He shall be exalted*".† And I also recall that in the science-fiction novel **Contact**,‡ written by the celebrated cosmologist Carl Sagan, modern radio astronomers first detect intelligent extraterrestrial life through the reception of a sequence of prime numbers transmitted from Vega!

Anyway, I try to evoke, within the sound-world of **Cycles of Vega**, an extremely unearthly, timeless, cosmic, astral state. In large part, this is achieved through the use of a rather unusual (even idiosyncratic) instrumentation – which includes twenty(!) varieties of windchime, seven *rin* (Japanese temple bells) and tubular aluminium sound-sources that I have constructed and assembled myself ("Shan Tubes"), as well as a number of other metallic percussion instruments. (Some of these instruments' microtonal tunings, and the e♭ clarinet's technical treatment in general, additionally indicate an attempt on my part 'to look ahead' musically and aesthetically, liberated from the artificial restrictions of the past.)

The fascinating stochastic behaviours at play within the windchimes themselves – a prominent element of the piece, simply because these instruments are so numerous – provide a metaphorical mirror for the complex tumultuousness of the Cosmos itself: Cosmological Entropy, Chaos, and the Second Law of Thermodynamics ... as well as the seemingly random chaotic perturbations – 'nutation' – of the Earth's polar axis, which wobbles periodically in conjunction with the precession-of-the-equinoxes phenomenon, itself evinced by equinoctial points retrogressing ever so slowly along the ecliptic. (Such labyrinthine concepts, exhibiting 'disorder within meta-order', are encapsulated beautifully by James Joyce's neologism "chaosmos"!)

Furthermore, the intricate structural hierarchies woven into **Cycles of Vega** could perhaps be interpreted as an (admittedly gross) simplification, essence, sign, or symbol of the infinite architectonic nature of God's Universe.

Cycles of Vega was commissioned by the Australian clarinetist Roslyn Dunlop, with funds provided by the Performing Arts Board of the Australia Council for the Arts; it is gratefully dedicated to Ros – and also to two of my former composition teachers, Eric Gross and Peter Sculthorpe, at the University of Sydney.

© Ian Shanahan, Sydney, Australia; 10 March 1990.

* Richard Hinckley Allen: **Star Names: Their Lore and Meaning** (Dover Publications, Inc., New York, 1963; ISBN 0-486-21079-0), pp.282–286.

† Ethelbert William Bullinger: **The Witness of the Stars** (Kregel Publications, Grand Rapids, Michigan, U.S.A., 1995; ISBN 0-8254-2245-0), p.66.

‡ Carl Sagan: **Contact: A Novel** (Arrow Books Ltd., London, 1986); ISBN 0-09-950780-3.

Cycles of Vega was premièred by Roslyn Dunlop (e♭ clarinet), Daryl Pratt (percussion), and Anthony Cowdroy (percussion), during the Second Sydney Spring International Festival of New Music, held at the Art Gallery of New South Wales, Art Gallery Road, The Domain, Sydney, on 2 November 1991. The composer was subsequently awarded **The Adolf Spivakovsky Memorial Prize for Composition** (1991), for **Cycles of Vega**.

A recording of **Cycles of Vega**, played by the same personnel, is now commercially available on the Compact Disc "Shoalhaven Suite" (Broad Music Records Jade JAD CD 1087).

HIPPARCHOS

Cycles of Vega,
stately precession:
Axial changes so slow.

Azimuth rising,
Pole Star declining:
spinning-top Earth 'round you go!

I. L. Shanahan, 31.8.1989.

PERFORMANCE NOTES

PREAMBLE

I wish to thank *Roslyn Dunlop* for her research assistance, for her kindness in demystifying the subtleties of the e \flat (sopranino) clarinet for me, as well as her patient editorial guidance later on in the compositional process – particularly in relation to the deployment of many unusual e \flat clarinet fingerings throughout **Cycles of Vega**. I am also greatly indebted to *Daryl Pratt* who, as usual, was keen to share his immense knowledge of the percussion genre and how to compose intelligently with it: for example, in deciding upon the layout and distribution of the percussion instruments in **Cycles of Vega** (thereby ensuring that mallets and percussion instruments would always remain compatible), Daryl's expert advice was invaluable. I thank him for his affable generosity.

1. GENERAL REMARKS

INSTRUMENTATIONAL REQUIREMENTS

• *Sopranino Clarinet in e \flat*

• *Percussion (2 players)*

Percussion 1

- vibraslap {at rest on the mallet-tray}
- large autocoil {suspended high}
- very large triangle {suspended high}
- crotales (one octave set) {rack-mounted}
- vibraphone (*optional*: employ an assistant to regulate its rate of vibrato)
- 4 cowbells {rack-mounted}
 - 2 agógo bells
 - 2 cencerros
- 6 large-diameter “Shan Tubes” {suspended very high} *
- 3 suspended cymbals {all suspended on cymbal stands, but ideally grouped together in vertical order upon a single cymbal stand} †
 - 1 large sizzle cymbal
 - 1 large Chinese cymbal
 - 1 very large (Turkish) suspended cymbal

Percussion 2

- 3 suspended cymbals {all suspended on cymbal stands, but ideally grouped together in vertical order upon a single cymbal stand} †
 - 1 large sizzle cymbal
 - 1 large Chinese cymbal
 - 1 very large (Turkish) suspended cymbal
- dove call in C {hanging from a string, around the percussionist's neck!}
- vibraslap {at rest on the table with the rin}
- 8 windchimes, activated mainly by the percussionist's right hand {all suspended high}
 - 1 aluminium-tube windchime
 - 1 ceramic-disc windchime
 - 1 brass-bell windchime
 - 1 shell-disc windchime
 - 1 wooden-rod windchime
 - 1 bamboo-tube windchime

- 1 sea-urchin-spine windchime
- 1 herd-bell windchime
- ‘triangle windchime’ (3 triangles) {suspended high}
- 6 small-diameter “Shan Tubes” {suspended very high} *
- 7 Japanese temple bells (rin) {resting upon their traditional cushions, on a (cloth-covered) table}
- sleighbells {suspended high}
- 9 windchimes, activated mainly by the percussionist's left hand {all suspended high}
 - 1 wooden-rod windchime
 - 1 bamboo-tube windchime
 - 1 sea-urchin-spine windchime
 - 1 shell-disc windchime
 - 1 ‘Kenyan bell tree’
 - 1 ceramic-disc windchime
 - 1 brass-tube windchime
 - 1 aluminium-tube windchime
 - 1 brass-disc windchime
- very large tam-tam {suspended in a frame}

Note: technical specifications with detailed descriptions of all of these percussion instruments shall be given later; I have also appended to these Performance Notes a comprehensive diagram depicting their *physical layout*.

* Both sets of “Shan Tubes” require *very high* stands – reaching at least 2 metres above the floor! The “Shan Tubes” themselves are suspended in much the same manner as a set of commercially manufactured tubular bells, from many small hooks screwed into a pair of flat home-made rectangular wooden racks. However, in performance, these suspension-racks *must* be placed close enough together so that each set of “Shan Tubes” physically interacts with the other set, as a kind of single ‘super windchime’, at the climax of **Cycles of Vega** (bar 177).

† Note that until bar 39 in **Cycles of Vega**, both percussionists are able to share the same set of three (suspended) cymbals: duplicate instruments are therefore not needed (although their presence would serve to expand this composition's timbral spectrum).

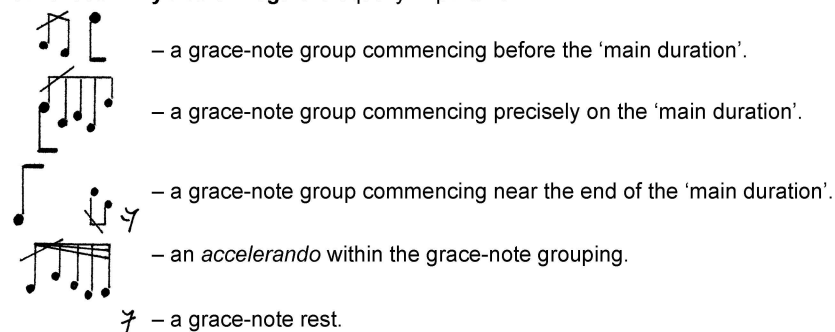
ADJUSTMENT OF TEMPI, AND DURATION

If the fastest tempi specified in **Cycles of Vega** prove to be overwhelming for the performers, then decrease *all* tempi *proportionately*, by the same factor – lest the work's architecture be distorted. (Likewise, the duration of each pause lasting a given number of seconds will need to be multiplied accordingly.) This is by no means a desirable circumstance, for the designated tempi are optimal and preferred: I therefore encourage all executants to work up to playing **Cycles of Vega** at these tempi!

Cycles of Vega embraces extremely subtle, long-range *accelerandi* and *decelerandi* (bars 12–36; bars 86–178; and bars 180–214), the contours of which are defined by approximate tempo-indications every bar or so. In order that performers attain the required shapes of these tempo-contours fairly accurately, they are advised to repeatedly ‘count through’ the piece with an *electronic metronome*, turning the device's dial correspondingly. This practice activity will greatly assist projecting, in concert, the right ‘feel’ of tempo-evolution. Of course, a certain degree of flexibility is permissible, provided that the general contours of tempi are preserved overall. Additionally, approximate durations (in minutes and seconds) of subsections of **Cycles of Vega** have been supplied, both singly and cumulatively, as an aid to executants in this respect.

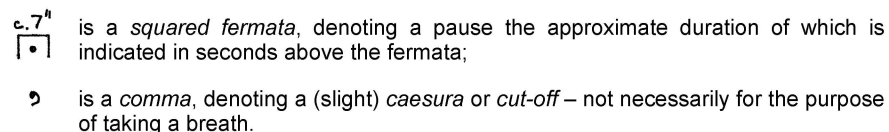
GRACE-NOTE GROUPS

Grace-notes occupy (very) short indeterminate durations, which are left to the discretion of the player. In general, they should be played quite rapidly (but not necessarily evenly), at a speed somewhat dependent upon local context and other instructions or technical exigencies. Grace-notes marked "agile" or "rapid" (etc.) should be interpreted accordingly, or even played 'as fast as possible' ("a.f.a.p."). Furthermore, grace-notes ought not to be thought of as mere 'ornaments', of secondary architectonic status, to the 'main notes': *all* sonorities in **Cycles of Vega** are equally important!



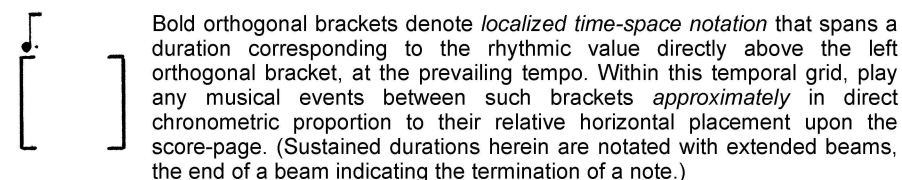
PAUSES

Unless otherwise indicated, precise durational details of pauses are left to the interpretation of the performers. The following symbology is employed:



The durations of other pauses – given as a squared fermata alone (≡) – are determined entirely by instrumental characteristics or other acoustical properties: e.g. "Pause until the Tam-Tam resonance is 'pp'"; etc. (The appropriate textual instruction is always provided in conjunction with the squared fermata.) Sustained (approximate) durations within the ambit of such pauses are notated time-spatially – i.e. extended *beams* depict such local durations; the end of a beam indicates the termination of a (previously sustained) note.

LOCALIZED TIME-SPACE NOTATION



DYNAMIC INDICATIONS

Apart from the traditional dynamic indications (*ppp*, *pp*, *p*, *mp*, *mf*, *f*, *ff*, *fff*), the following symbols are employed in **Cycles of Vega**:

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p poss. and *f poss.* are abbreviations for 'as soft as possible (but still audible)' and 'as loud as possible', respectively;

<> >< small '*hairpins*' (*crescendi* and *diminuendi*, without any other dynamic indications) signify a very subtle nuance of dynamic variation around the prevailing dynamic level;

o represents the initial emergence from, or final vanishing into, *inaudibility*;

Dynamic indications apply until they are modified by the next dynamic instruction. Moreover, a proper balance of dynamics between instruments ought to be maintained throughout **Cycles of Vega**: for example, the perceived loudness of an *mf* sonority in one part should match that within the other two parts.

ARTICULATIONS AND ACCENTS

All articulations – *legato*, *tenuto*, *mezzo-staccato*, *staccato*, *staccatissimo*, *accent* (>), *sforzando* (^) etc. – should be duly observed. For the purposes of **Cycles of Vega**, a *tenuto* marking (–) is simply to be understood as a direction to sustain a sonority for its *full duration* as given (or even a little longer), and *staccatissimo* denotes a very short, clipped envelope (i.e. '*molto staccato*'); neither *tenuto* nor *staccatissimo* in themselves imply the application of *any* additional accent or stress whatsoever in the attack, unless otherwise indicated. Moreover, a *sforzando* attack will always be based upon the prevailing dynamic level, so that (for example) *sffz* = *sforzando* in *ff*.

QUARTERTONES, OTHER MICROTONES, AND PITCH DESIGNATION

The following symbology for *microtones* is employed in **Cycles of Vega**:

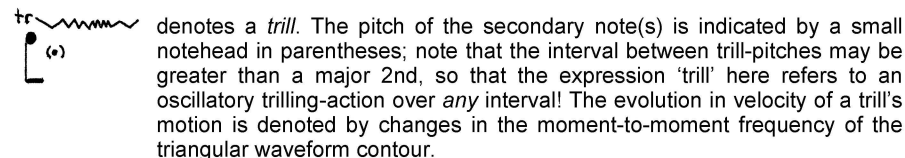
and ↓ denote a *quartertone above* ♯, and a *quartertone below* ♯, respectively (i.e. 24-tone equal temperament). Arrowheads upon any accidentals denote slight intonational deviations – up to about an eighthtone, but not necessarily tempered – in the given direction.

In any *textual references* to pitch herein:

– "Middle C" shall be designated as C_{♯3}, the C_♯ one octave higher as C_{♯4}, etc. (i.e. assuming that A_{♯3} = 440 Hz, then C_{♯3} ≈ 261.6255653 Hz).

– # and ↓ denote a *quartertone above* ♯, and a *quartertone below* ♯, respectively. Smaller degrees of intonational deviation – slight microtonal inflections, non-tempered, of up to about an eighthtone – upwards and downwards are indicated by upward-pointing and downward-pointing arrowheads, respectively, upon accidental symbols. Examples: B_{♯5}; F_{♯4}; A_{♯3}; G_{♯2} etc.

TRILLS



In relation to trill-speed, "a.f.a.p." is simply an abbreviation for 'as fast as possible'.

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RANDOMIZED PARAMETERS

“Rand.” denotes the random treatment, over a specified duration, of individual, clearly indicated technical/musical parameters. Such parameters operate independently of one another when more than one parameter is so engaged. “Rand.” may be applied to the trilling-action of a (sub)set of fingers in a clarinet fingering, to the frequency modulation (i.e. speed-changes) in a trill or clarinet key-vibrato, or to the vibraphone’s vibrato-rate between given upper and lower limits, for instance.

CUEING ONE ANOTHER WITHIN BAR 39

Within each part comprising the *single, fluidly shaped macro-event* that spans bar 39 in **Cycles of Vega**, instructions are provided for *cueing or reacting to one another* – either as an instantaneous response to one musical gesture, or as a trigger for another executant to immediately perform some other musical gesture. Such ‘aural catalysts’ are notated as *large bold arrows*, together with the name of another instrument (and, if necessary, a technical description of what is being played upon that instrument) written nearby.

Elsewhere throughout **Cycles of Vega**, all interpreters are encouraged to discover, thence to notate within their own parts, additional points in the music when cueing one another *for the sake of accurate coordination* might prove salutary.

VISUAL IMPACT AND LIGHTING IN CONCERT

The gestural/theatrical aspect inherent within the instrumental set-up and public presentation of **Cycles of Vega** must *enhance* the music, not impede or contradict it. All physical gestures and actions must be seen to be deliberate, fluid, and totally controlled: this sort of ‘effortless theatricality’ is crucial, for instance, in the second percussionist’s performance upon their numerous windchimes (bars 1–179) – lest they appear instead to be merely a child running amok in its play-pen! Furthermore, the percussionists should pick up any mallets (or hand-held instruments, such as the vibraslap) as discreetly and unobtrusively as possible.

In mounting a performance of **Cycles of Vega**, I do encourage the artistic use of stage lighting and spotlights (of various hues), so long as they are employed *tastefully*. Such visual effects must enhance the cosmic, other-worldly soundscape of this piece!

2. THE SOPRANINO CLARINET IN E♭: DETAILS

E♭ CLARINET FINGERINGS

Every fingering-indication provided within the score of **Cycles of Vega** that *supplies the notated pitch(es) accurately over the given duration* is to be strictly adhered to: any modifications of such fingerings are forbidden! But whenever a fingering yields an unacceptably inaccurate outcome, or is acoustically untenable on a particular instrument, then the clarinetist is at liberty to alter that fingering – subject to the proviso that the resultant sonority matches, as closely as possible *in context*, the composer’s original intention. (If no such fingering exists, then just do your best with the provided fingering.) So, whatever fingerings end up being employed herein, the sonic results must always correspond as closely as possible to the notated pitches while retaining, as much as possible, the original timbral signatures generated by the specified fingerings.

Non-standard fingerings for *chromatic pitches*, for *tempered quartertones and other microtones*, and for *multiphonics* found in **Cycles of Vega** are appended within a prefatory

~ v ~

table – to aid the clarinetist in checking their intonational accuracy, to assist in the familiarization process, and for general practice purposes.

MULTIPHONICS

The notation of e♭ clarinet multiphonics in **Cycles of Vega** is necessarily incomplete: sidebands, such as ‘difference tones’, have been excluded. Nonetheless, the pitches of the highest and lowest component tones (the primary audible pitches) are carefully notated, and should therefore be fairly accurate in performance; this can be ascertained by playing through the abovementioned table. If, however, any *infinitesimal* pitch-discrepancies do occur in playing these multiphonics on your instrument, then they can be ignored!

The *steadiness* of (unstable) e♭ clarinet multiphonics is not a high priority: unless otherwise indicated, a reasonable degree of ‘inner fluctuation’ is acceptable. Similarly, it is my intention that certain *slow-speaking* multiphonics might be heard only incipiently, whenever their specified durations are insufficient to fully secure and stabilize all of their constituent pitches simultaneously.

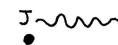
VIBRATO

If used at all when not specifically called for, vibrato on the e♭ clarinet should be employed with considerable discretion throughout **Cycles of Vega**. Air-column vibrato (generated by pulmonic action), or perhaps even jaw-vibrato, is recommended; unspecified key-vibrato is, however, forbidden!

The following vibrato-types are called for at specific points in the music:

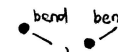


denotes a *key-vibrato*. Its fingering and trilling-action is specified by the tablature pictograph above the staff. The triangular waveform contour suggests micro-details of the key-vibrato’s frequency, which may be static or evolving. The emphasis here is upon *timbral* oscillation – although some small microtonal fluctuations may be evident as well. All e♭ clarinet key-vibrati employed in **Cycles of Vega** have been appended within a prefatory table, the rationale for selecting each key-vibrato’s fingering being that it achieves maximal timbral alteration with a minimal pitch-shift, wherever possible.



denotes a *jaw-vibrato*. Repeatedly inflect the given note’s pitch with the embouchure and/or through oral-cavity manipulations. The sinusoidal waveform contour suggests micro-details of the jaw-vibrato’s frequency and amplitude (i.e. the extent of pitch-alteration around the given note), either of which may be static or evolving. Precise details concerning the (maximum) width of pitch-inflection are left to the discretion of the clarinetist.

PITCH-BENDS AND PITCH-INFLECTIONS



denote downward and upward *pitch-bends*, respectively – they are executed with the embouchure and/or through oral-cavity manipulations. (Ameliorative changes of fingering-configuration during a pitch-bend are permissible, so long as the pitch-bend itself sounds perfectly smooth.) Pitch-bends should always be carried out towards the end of the indicated duration; moreover, the termination of the ‘bent’ tone must never be emphasized. Soft (diminuendo) downward pitch-bends are to be reminiscent of a sigh, as if the clarinetist is running out of breath! Precise details concerning the range of

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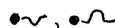
the pitch-bend are left to the discretion of the clarinetist.



In exactly the same manner as above (including permissible changes of fingering-configuration), bend the tone upwards as far as possible, smoothly.

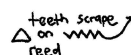


denotes a 'fall-off' – a pitch-bend falling downwards as far as possible or practicable, using finger-action as well as embouchure and/or oral-cavity manipulations. Allow the tone to break down and smear into lower registers as well!



denote downward and upward *pitch-inflections*, respectively. These are equivalent to their pitch-bend counterparts – except that the pitch promptly returns to the initial given pitch, as shown. The timing of the pitch-inflection within the note's overall duration is clearly indicated on each occasion.

TEETH-ON-REED



By placing your lower teeth directly upon the e♭ clarinet's reed, project a thin, piercing, rather unstable but extremely high-pitched (indeterminate) sound; include changes in embouchure-pressure as well. Then scrape your lower teeth up and down over the reed's surface, to create a rough 'broken portamento' effect, including random changes of partial. End the event on as high a pitch as possible, as shown. (Note that such sound-production activities evolve independently of fingering considerations.)

ARTICULATION

The following special articulations for the e♭ clarinet are utilized in **Cycles of Vega**:



denotes *fluttertonguing*, a trilling of the tongue-tip against the alveolar ridge, or alternatively, a trilling of the back of the tongue against the uvula (soft palate) – as in gargling. Either type of fluttertonguing is acceptable within **Cycles of Vega**: the type, intensity, and speed of the fluttertonguing to be employed at each occurrence are left to the discretion of the clarinetist.



denotes a *slaptongue*. Place a large portion of your tongue against the reed, thereby creating a vacuum between the surface of your tongue and the reed. Suddenly 'break' this vacuum by pulling your tongue down away from the reed – this is often accompanied by a drop in jaw-pressure – whilst simultaneously initiating the air-stream. Such actions on an e♭ clarinet should result in a very strong, almost percussive attack to a normally-blown note: this instrument's reed is simply too small to generate the characteristic 'thud' of a larger reed noisily rebounding against the mouthpiece, as in a bass clarinet slaptongue. The clarinetist should vary the slaptongue's intensity in accordance with the indicated dynamic level.



denotes an *aspirated attack*, with minimal intensity, using the phoneme 'h' (as in "hamster"): the sonority is to be rendered *without any 'tonguing' whatsoever!*



denotes a *diaphragm thrust*. Attack the note with a sharp jolt or impulse from the diaphragm only; do *not* 'tongue'. Again, the articulatory action here is entirely aspirated and pulmonary – but with the aspiration being suitably intensified and heavily accentuated.



denotes a rising *pitch-bend (portamento) attack*, executed at the beginning of, or immediately prior to, the indicated duration: the technique needed here is precisely the same as that required to produce a pitch-bend (see above). The pitch-range covered by this smooth, upward 'scoop' into the note is left to the discretion of the clarinetist.



denotes a (very) brief '*squawk*' *attack* – involving any (very) high pitch elicited from, or somehow related to, the fingering for the primary note, overblown. This colourful attack can be achieved by momentarily touching your lower teeth against the reed; or perhaps better still, curl your lower lip back behind the reed and behind your upper teeth, and with sufficiently high breath-pressure, then allow your lower lip to be blown forward, bursting explosively into its normal embouchure position, thereby yielding a particularly dramatic, raucous overblown attack. The sound, as I have imagined it while composing **Cycles of Vega**, is merely an inseparable part of the note's attack characteristic, and so ought to resemble the occasional transient squeak/squawk noises of a tenor or baritone saxophone that occur sometimes at a change of register in playing jazz.

AIR-SOUNDS



denotes an *air-sound*, in which the given (first-register) pitch is fingered while air is blown through the e♭ clarinet with a loose embouchure that is insufficient to cause the generation of a normally-produced tone: a breathy tube-resonance with a clearly discernible pitch-centre (corresponding to the fingering's fundamental mode of vibration) ensues. Note that an air-sound's timbral quality may be modified in a quite subtle but continuous manner through fluctuations in breath-pressure, or by varying the embouchure and the shape of the oral cavity: the sensible application of these techniques is left entirely to the discretion of the clarinetist. Whenever the circular notehead is drawn non-specifically beneath the staff (bars 1–35), the air-sound's pitch-bias is indeterminate.



denotes a normally-produced tone that contains *strong air-coloration* (i.e. 'breathiness').



denotes a *transition* from a 'pure' tone (containing no air-coloration) to an air-sound.



denotes a *transition* from an air-sound to a 'pure' tone (containing no air-coloration).

KEY/FINGER-SOUNDS



denotes a *key/finger-sound*, in which the e♭ clarinet's key-mechanism is made audible and/or tube-resonances are generated by keys/fingers slapping shut *hard* over their holes, in addition to the blown tone. In trilling actions, an × is drawn above the triangular waveform contour; the finger(s) engaged in the ongoing percussive activity are usually identified with an × in the tablature pictograph. A *transition* to prominent key/finger-sound (*f poss.*) is indicated by ----- ×.

3. THE PERCUSSION INSTRUMENTS: DETAILS

PREAMBLE

Cycles of Vega calls for a number of highly exotic and/or extremely rare – even unique

– percussion instruments. Therefore, in order not to make this piece's realization prohibitively difficult, I propose the following practical solutions:

- Many of these percussion instruments can be obtained directly from the composer.
- Alternatively, percussion instruments such as the windchimes and the “Shan Tubes” can easily be constructed according to the detailed specifications provided herein.
- Some substitutions are permissible; specific suggestions will be made later in this regard.
- Electroacoustic sound-production (e.g. digital sampling and the activation of samples with MIDI percussion instruments – or even digital synthesis and signal processing with a synthesizer or computer, rather than sampling) is another viable possibility, if certain percussion instruments are definitely unavailable; this is by no means an ‘ideal solution’ (either acoustically or visually), though.

It is crucial that the microtonal tunings of many of the percussion instruments described below be preserved *at all costs*: these particular micro-intonations were very much fixed in my ‘mind’s ear’ throughout the composition of **Cycles of Vega**; it is, therefore, obligatory that instruments which conform as closely as possible to these tunings be procured! Note that certain percussion instruments whose pitches *almost* match those designated may in fact be inflected accordingly: for example, some rin pitches could be flattened somewhat by pouring a certain amount of water into the rin (although the water’s inertia does entail an undesirable loss of rin resonance); cowbell pitches may be flattened similarly by adhering some extra weight (e.g. large lead fishing sinkers embedded within a malleable gummy substance such as “Plasticine” or “Blutac”) inside the cowbells, etc.

RESONANCE AND ARTICULATION

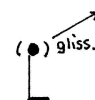
- ~ Allow the note(s) to *resonate beyond their specified duration*. Unless otherwise directed, such notes should be allowed to resonate until their sound has completely dissipated. The complex aleatoric sound-textures of all *windchimes* (and cognate instruments) must always be permitted to decay into silence!
- ◇ denotes *damping* the resonance of the specified instrument(s) – by hand, or with a mallet – *to silence* after it has been struck, at precisely the moment in time corresponding to the rhythmic placement of the closed-diamond notehead.
- * denotes a ‘*deadstick*’. Once the mallet has struck a sound-producer of an instrument, it remains in physical contact with the strike-point, without rebounding, thereby muffling or damping any after-resonance. In **Cycles of Vega**, this technique is applied only to the vibraphone (in “non Ped.”). The resultant vibraphone sound’s envelope will thus be a fairly brief ‘choked’ staccato.
- (*) A parenthesized × – (×) – upon a vibraphone note’s stem denotes ‘*deadsticking*’ if at all possible.
- ≡ denotes a *tremolo* using (at least) two mallets.

ARPEGGIATION

- ↗ – *arpeggiate* the notes in a somewhat leisurely manner.
- ↘ – (*very*) *rapidly* arpeggiate the notes of the chord.

For both forms of *arpeggiation*, their speed of execution is left to the discretion of the performer. *Arrowheads* upon the above symbols indicate the *direction* of the arpeggio’s action: ↑ = play the *lowest pitch* of the chord first; ↓ = play the *highest pitch* of the chord first.

GLISSANDI



denotes a *glissando*, in the given direction. The glissando’s initial (parenthesized) note should not be accented or individually attacked; the glissando’s ending-note – likewise played with absolutely *no* emphasis – is indeterminate, but corresponds vaguely to the point where the glissando’s line-contour terminates with an arrowhead: such glissandi usually cover as wide a range as possible. Whenever this arrowhead is replaced by a regular notehead in parentheses, the glissando’s ending is now, of course, clearly specified; however, exactly as with the glissando’s initial note, this final note must not at all be attacked individually.

The actions of all glissandi in **Cycles of Vega** *always span the entire duration as notated*.

Any accidental in front of a glissando’s initial pitch (i.e. ‘sharp’ [♯] or ‘flat’ [♭], or ‘natural’ [♮]) unambiguously indicates whether the glissando-action shall take place upon a keyboard percussion instrument’s ‘white’ (diatonic ‘natural’) or ‘black’ (pentatonic ‘accidental’) notes.

MALLETS






The following pictographs illustrate the different types of percussion mallet called for throughout **Cycles of Vega**. Drawn together in various combinations *within rectangular boxes*, such pictographs show the number, type, and deployment between the left and right hands of mallets required over each section of the music; no more than two mallets per hand are ever needed. Usage of the ‘plus’ and ‘minus’ symbols (+, –) in this context indicates a straightforward temporary change from the basic mallet-configuration. In relation to certain percussion instruments (such as the autocoil and the crotales), a mallet pictograph marked “sempre” means that henceforth, until further notice, only the indicated mallet-type is to be used to elicit sound from this instrument. Otherwise, a non-boxed mallet pictograph just refers to a specific percussion instrument and note.

Note: L.H. = the left hand; R.H. = the right hand.

PERCUSSION 1

- denotes a *very hard and heavy brass glockenspiel mallet*.
- denotes a *yarn-wound vibraphone mallet of medium hardness*.
- denotes the **vibraslap**, held by the right hand (bars 4–36)! Strike the specified percussion instruments with the vibraslap’s hard wooden ball!
- Play the vibraphone glissando with the very end of the vibraphone mallet’s rattan/cane handle (bar 39)!

PERCUSSION 2

-  denotes a very hard and heavy brass glockenspiel mallet.
-  denotes a large, (very) soft tam-tam beater. This tam-tam beater should be carefully suspended from the tam-tam's frame in such a way that the beater's interference with (damping of) the tam-tam's resonance, after the tam-tam has been struck, is non-existent or negligible.
-  denotes a very hard plastic (or heavy brass) glockenspiel mallet.
-  denotes a yarn-wound vibraphone mallet of medium hardness.
-  denotes an authentic hard wooden rin beater (*not* the soft, suede- or kidskin-bound variety); such beaters usually accompany the rin themselves. This quite rare type of beater resembles a short wooden rod, about 150 mm long, wrapped lightly with thin colourful cloth: if it is unavailable, then substitute an ordinary hard wooden or hard plastic mallet instead.

PERCUSSION INSTRUMENTS: DETAILED DESCRIPTIONS AND ABBREVIATIONS

Within the two percussion parts, all of the percussion instruments are notated in sequential order according to their physical distribution; they are listed below in the same fashion.

PERCUSSION 1

Vibraslap: Vbslp

Select a vibraslap with as wide a dynamic- and resonance-range as possible! A metal vibraslap (with a wooden ball) is quite acceptable.

Large Autocoil: Coil

A large helical spring, from the front-end suspension of a car, hung up high by a leather bootlace. An arrow to the left of a notehead indicates a sweeping rasp-like 'arpeggiando' attack (either upwards or downwards) that dramatically runs along the whole length of the helix, striking most (or all) loops in rapid succession; otherwise, for the coil's normal mode of performance, tap just a single loop.

Very Large Triangle: Tri

Use the largest triangle you can possibly find, suspended high! (Its timbre must be quite different to that of the large autocoil.)

Crotales: Crot

Written range: C \sharp 4 — C \sharp 5, sounding two octaves higher than notated. The thirteen crotali should be rack-mounted, in the manner of a keyboard. If preferred however, a set of thirteen rack-mounted crotali sounding one octave lower than those described above (i.e. with the written range C \sharp 4 — C \sharp 5, but sounding just one octave higher than notated) may be employed instead. This lower-octave set of crotales will certainly possess a greater resonance and longer decay-times than the higher-octave set; in any case, the actual sounding octave of crotales does tend to be somewhat ambiguous to the ear.

Vibraphone: Vib

Range: F \sharp 2 — F \sharp 5. A high-quality modern instrument (with wide bars in the low register) is required. The vibraphone must also be equipped with an electric motor and potentiometer that will yield a continuously variable speed of vibrato — widely ranging from 'slow' to 'fast'; an

instantaneous vibrato on/off capability, activated by a switch and/or by the potentiometer, is needed as well. Indeed, the vibraphone's vibrato must be able to be turned on or off with the potentiometer alone: for instance, this faculty is crucial for the initial vibrato accelerando, in bar 44.

Vibraphone Vibrato: Rates of vibrato on the vibraphone are specified by ringed numbers: ① indicates non-vibrato (i.e. 'motor off'); ⑥ signifies the vibraphone's maximum vibrato-frequency; ① and ② \approx 'slow' vibrato; ③ and ④ \approx 'medium' vibrato; and ⑤ \approx a 'fast' vibrato. Between the extremes of ① and ⑥, the numbers ①, ②, ③, ④, and ⑤ denote approximately equal gradations of vibrato-rate; hence, each of these numbers is perhaps best thought of as a narrow bandwidth of vibrato-frequencies, so that ③ (for example) does not designate a precise, fixed rate of vibrato for each of its occurrences. When the vibraphone's motor is turned off (i.e. to ①: non-vibrato), do please remember also to rotate the vibrato-discs at the top of the instrument's resonators to their vertical position — in order to capture the vibraphone's maximum degree of sonorousness. Smooth transitions between numbered rates of vibrato (i.e. vibrato accelerandi or vibrato rallentandi) are depicted by appropriately sloping dashed lines which connect the ring around one vibrato number to that around the next. NB: it is most probably advantageous to employ an assistant whose sole purpose will be to manipulate the vibraphone's potentiometer, and thus regulate its rate of vibrato.

Vibraphone Pedalling: All pedalling on the vibraphone is clearly indicated throughout **Cycles of Vega**. "non Ped." must be strictly observed! (No damping of resonance by hand is called for anywhere in this work.)



Glissandi across the Vibraphone's Resonator Tubes: Using the ball of the vibraslap, execute an extremely violent glissando across most or all of the vibraphone's resonator tubes, sweeping from left to right, starting with the resonator tube for F \sharp 2 — a very aggressive, quite ugly rasping sound (bars 4–36)! Do allow the vibraslap to resonate fully as well, please.

4 Cowbells: Cowb

Two agogo bells (Cowb 1 & 2) and two cencerros (Cowb 3 & 4), rack-mounted. The agogo bells may be replaced by cencerros, herd bells, almglocken, metal blocks or other forms of cowbell, if desired. Do not muffle or mute the cowbells in any way! The cowbells' timbre should be rather clangorous, not too mellow — although their given pitches must be readily distinguishable. The four cowbells utilized for the world première performance of **Cycles of Vega** were pitched as follows: **1** — B \sharp 4; **2** — G \sharp 4; **3** — G \sharp 4; **4** — F \sharp 4.

6 Large-Diameter "Shan Tubes": ShTL

These home-made metallic percussion instruments — which resemble large-diameter tubular bells (but are instead able to sway quite freely, as a kind of windchime) — are mostly struck individually, with vibraphone mallets. They all project a slightly 'dirty' gong-like sound — akin to that of the Javanese gamelan kettle-gongs known as 'kethuk'. It is of no consequence that "Shan Tubes" struck with mallets may themselves strike other "Shan Tubes" — although, if possible, this sort of knock-on effect really should not occur during low dynamic levels. A stem with a ^ drawn upon it denotes striking a large-diameter "Shan Tube" near its point of suspension: aside from timbral considerations, such a strike-point minimizes the possibility of the tube clicking against other tubes. Note that some trills on the large-diameter "Shan Tubes" can be carried out with one hand, by rattling a mallet very rapidly between two adjacent tubes. At bar 177, use both hands to collide all of the large-diameter "Shan Tubes" together in an explosively violent manner; agitate them further according to the given graphics! After bar 179, the interacting "Shan Tubes" will continue to click together for at least one minute into section J! This is intentional and has been taken into account by the composer, so do not attempt to damp the resonant sound-texture of this 'super windchime'.

ShTL Specifications: six aluminium (zinc-plated?) tubes: 52 mm outer diameter, with a seam; 1.2 mm gauge. Lengths: **1** — 604 mm; **2** — 876 mm; **3** — 952 mm; **4** — 1062 mm; **5** — 1122 mm; **6** — 1372 mm. The six large-diameter "Shan Tubes" that were utilized for the world première performance of **Cycles of Vega** produced the following readily-perceived pitches (although other, more obscure resonances are present as well): **1** — A \sharp 4; **2** — A \sharp 3, [D \flat 5]; **3** — F \sharp 3, B \sharp 4; **4** — [D \sharp 3], G \sharp 4; **5** — [C \sharp 3], F \sharp 4; **6** — [F \sharp 2], B \sharp 3.

3 Suspended Cymbals: Cym:

1 Large Sizzle Cymbal: Sizz

A large, very resonant, thin sizzle cymbal, possessing a high 'sizzle' and a long decay.

1 Large Chinese Cymbal: Ch

A (very) large, resonant Chinese cymbal.

1 Very Large (Turkish) Suspended Cymbal: Susp

A very large, 'splashy' Turkish suspended cymbal, pitched somewhat below the Chinese cymbal.

PERCUSSION 2

3 Suspended Cymbals: Cym

Until bar 39 in *Cycles of Vega*, both percussionists are able to share the same set of three (suspended) cymbals, whose details are given immediately above: duplicate instruments are therefore not required (although their presence would serve to augment this piece's timbral palette).

Dove Call in C: Dove

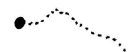
A dove call pitched at C \sharp 4, with its second-register tone (overblown attack transient) pitched at G \sharp 5. This simple wind instrument – played just once (in bars 43–45) – is suspended from a string around the percussionist's neck, being gripped in the mouth between both lips and/or the teeth. A mellow, hollow, eerie 'hooty' woodwind sound is required: acoustically, the dove call is a stopped pipe, which therefore must be blocked at its lower end. If an 'authentic' dove call is definitely unavailable, then use, as a substitute, a slide whistle (i.e. 'Swanee whistle') with its slide fastened into position once C \sharp 4 has been found. In any event, the chosen sound-producer must correctly furnish C \sharp 4! The following symbology is employed:



Attack the note strongly with the articulation phoneme 'tah', so that it overblows briefly to G \sharp 5.



An air-column vibrato, generated by pulmonary (blowing) action. Shape the vibrato's speed and depth in accordance with the sinusoidal waveform contour.



Roughly in accordance with the dotted contour, blow harder so that the dove call's C \sharp 4 rises approximately a semitone (thereby generating 'beats' with the vibraphone's C \sharp 4), then allow it to fall to at least a major second below the original C \sharp 4 – completely dying away to inaudibility. The single gesture as a whole ought to be extremely expressive!

Vibraslap: Vbslp

Select a vibraslap with as wide a dynamic- and resonance-range as possible! A metal vibraslap (with a wooden ball) is quite acceptable. This vibraslap must possess a timbre quite distinct from the vibraslap played by the other percussionist.

8 Windchimes, activated mainly by the percussionist's right hand [R.H.]:

1 Aluminium-Tube Windchime: AW *

This metallic windchime consists of six aluminium tubes: 25 mm outer diameter; 2 mm gauge. Lengths: **1** – 348 mm; **2** – 370 mm; **3** – 399 mm; **4** – 430 mm; **5** – 468 mm; **6** – 500 mm. Its large central disc, made of hard plastic, strikes each tube towards its midpoint; very little displacement of this central disc should be needed to make all of the tubes resound. The aluminium-tube windchime that was utilized for the world première performance of *Cycles of Vega* produced the following readily perceived pitches, a 'quasi-pentatonic' set (although other, more obscure resonances are also present): **1** – D \sharp 5; **2** – C \sharp 5; **3** – A \sharp 4; **4** – G \sharp 4;

5 – E \sharp 4; **6** – D \sharp 4. This windchime possesses a mellow, starry, 'soft' sound – slightly rin-like in timbre (but different to ShTS 1 and ShTS 2 [see below]); ca.30" decay!

1 Ceramic-Disc Windchime: CW *

This earthenware windchime consists of six to ten large glazed ceramic discs, which may be irregularly shaped. It should possess a rich and resonant sound – 'loud', mellow, relatively low-pitched; ca.15-20" decay.

1 Brass-Bell Windchime: BrBW

This metallic windchime consists of three tiny brass/bronze bells (without clappers) suspended in a horizontal line from a rod – with the lowest-pitched bell hung in the middle, just touching the other two bells. These bells' approximate pitches are: **1** – C \sharp 8; **2** – C \sharp 7; **3** – G \sharp 6. Their timbre should be very cutting; ca.5" decay. Jolt, displace or shake the bells' suspending rod (or the bells themselves) to trigger a sequence of echoed attacks – roughly in accord with the notated waveform contours.

1 Shell-Disc Windchime: ShW *

This 'crustaceous' windchime consists of many large discs made of shell, suspended vertically in several lines. It should possess a 'hard' moderately loud clattery sound – medium- to high-pitched; ca.5" decay.

1 Wooden-Rod Windchime: WW *

This ligneous windchime consists of many cylindrical hardwood rods. It should possess a more brittle sound than the bamboo-tube windchime described immediately below – medium- to high-pitched; ca.5" decay.

1 Bamboo-Tube Windchime: BaW *

This vegetal windchime consists of many hollow, round bamboo rods/tubes. It should possess a very dry, hollow sound – medium- to high-pitched, but lower-pitched than the wooden-rod windchimes described immediately above; ca.5" decay.

1 Sea-Urchin-Spine Windchime: SUW *

This rather rare 'echidermous' windchime consists of numerous sea-urchin spines. It should possess an extremely high, dry, delicate sound; ca.10" decay. If a sea-urchin-spine windchime cannot be obtained, then it may be replaced by a stone or glass windchime.

1 Herd-Bell Windchime: HW *

This metallic windchime consists of four quite small cylindrical iron(?) herd bells, with clappers, suspended in a circle. These herd bells' pitches are: **1** – B \flat 4; **2** – B \flat 4; **3** – A \sharp 4; **4** – G \sharp 4. Such a homespun windchime can be readily constructed by appropriately suspending four (clattered) cowbells of any type or shape – so long as they render the abovementioned pitches; ca.2" decay.

'Triangle Windchime': Δ WC *

Three triangles of different size/pitch – i.e. small, medium, and large triangles – suspended high and grouped together (as a windchime) in such a way that each triangle bangs against the others without losing much of its natural resonance.

6 Small-Diameter "Shan Tubes": ShTS

These home-made metallic percussion instruments – which resemble small-diameter tubular bells (but are instead able to swing quite freely, as a kind of windchime) – are mostly struck individually, with hard wooden cloth-covered rin beaters. The four longest tubes manifest a timbre very much like tubular bells, whilst the shortest two tubes sound slightly rin-like. It is of no consequence that "Shan Tubes" struck with rin beaters may themselves strike other "Shan Tubes" – although, if possible, this sort of knock-on effect really should not occur during low dynamic levels. A stem with a ^ drawn upon it (bar 168) denotes striking a small-diameter "Shan Tube" near its point of suspension: aside from timbral considerations, such a strike-

point minimizes the possibility of the tube clicking against other tubes. At bar 177, use both hands to collide all of the small-diameter “Shan Tubes” together in an explosively violent manner; agitate them further according to the given graphics! After bar 179, the interacting “Shan Tubes” will continue to click together for at least one minute into section J! This is intentional and has been taken into account by the composer, so do not attempt to damp the resonant sound-texture of this ‘super windchime’.

ShTS Specifications: six anodized aluminium tubes: 22 mm outer diameter; 1.6 mm gauge. Lengths: **1** – 573 mm; **2** – 603 mm; **3** – 917 mm; **4** – 1041 mm; **5** – 1146 mm; **6** – 1221 mm. The six small-diameter “Shan Tubes” that were utilized for the world première performance of **Cycles of Vega** produced the following readily-perceived pitches (although other, more obscure resonances seem to be present as well): **1** – G \sharp 3, C \sharp 5; **2** – F \sharp 3, B \sharp 4; **3** – F \sharp 4; **4** – D \flat 4; **5** – A \flat 3; **6** – G \sharp 3.

7 Japanese Temple Bells (Rin): Rin

Seven small- to medium-sized Japanese ‘cup bells’, resting upon their traditional cushions, which radiate extremely beautiful, resonant, sparkling, microtonal bell-sounds – all of them exhibiting very long decay-times. (Their resonance-times are: **1** – 13" [ppp] to 31" [ff]; **2** – 12" [ppp] to 25" [ff]; **3** – 14" [ppp] to 28" [ff]; **4** – 15" [ppp] to 33" [ff]; **5** – 15" [ppp] to 35" [ff]; **6** – 15" [ppp] to 45" [ff]; **7** – 20" [ppp] to 55" [ff].) When the smaller rin are struck forcibly, there is a slight but possible danger that they may be overturned and tipped off their cushions. Such a calamity can be prevented simply by attaching “Velcro” (or some other adhesive device) to each rin’s base and cushion – thereby physically attaching each rin to its cushion. However, the rins’ resonances absolutely must not be interfered with! (It might also be advisable to fasten the rin-cushions themselves to the table with pieces of string or masking tape.) Note that some trills on the rin (e.g. bars 54–55) are to be executed with just one hand, by rattling a single rin beater rapidly between two adjacent rin. The seven rin utilized for the world première performance of **Cycles of Vega** were pitched as follows (although other, higher partials are clearly audible as well): **1** – B \sharp 4; **2** – A \flat 4; **3** – G \sharp 4; **4** – F \sharp 4; **5** – D \flat 4; **6** – B \flat 3; **7** – G \sharp 3.

Sleighbells: Sleigh

A lush-sounding ribbon/loop-type sleighbell consisting of many individual pellet-bell elements, suspended high and struck (almost never shaken). A ghungrü (Indian bell strap) may be substituted, if necessary.

9 Windchimes, activated mainly by the percussionist’s left hand [L.H.]:

1 Wooden-Rod Windchime: WW *

This ligneous windchime consists of many cylindrical hardwood rods. It should possess a more brittle sound than the bamboo-tube windchime described immediately below – high-pitched (higher than the R.H. WW); ca. 5" decay.

1 Bamboo-Tube Windchime: BaW *

This vegetal windchime consists of many hollow, round bamboo rods/tubes. It should possess a very dry, hollow sound – medium- to high-pitched, lower-pitched than the wooden-rod windchimes described immediately above, but slightly higher-pitched than the R.H. BaW; ca. 5" decay.

1 Sea-Urchin-Spine Windchime: SUW *

This rather rare ‘echidmous’ windchime consists of numerous sea-urchin spines. It should possess an extremely high, dry, delicate sound – even higher-pitched than the R.H. SUW; ca. 10" decay. If a sea-urchin-spine windchime cannot be obtained, then it may be replaced by a glass or stone windchime.

1 Shell-Disc Windchime: ShW *

This ‘crustaceous’ windchime consists of many small discs made of shell, suspended vertically in a circle. It should possess a ‘soft’, gentle, delicate, brittle but dense sound – medium- to high-pitched; ca. 5" decay.

1 ‘Kenyan Bell Tree’: KBT

This unusual metallic windchime consists of about twenty or so bronze conical and cylindrical bells (with clappers), suspended in a flat diamond-shaped frame, microtonally pitched within the range C \sharp 5 – C \sharp 7. The Kenyan bell tree’s timbre should be a high-pitched, delicate, fairly dry jingle, rather cutting; ca. 5" decay. Jolt, displace or shake the framework to activate the bells, in accord with the notated waveform contours. If necessary, the Kenyan bell tree may be replaced by many very high, bundled-together almglocken, or – better still – a ‘string of jingle bells’ (strung together as a windchime).

1 Ceramic-Disc Windchime: CW *

This earthenware windchime consists of six to ten small circular glazed ceramic discs. It should possess a rather cutting sound – relatively high-pitched; ca. 10" decay.

1 Brass-Tube Windchime: BrTW *

This metallic windchime consists of ten or so small thick brass tubes (outer diameter ca. 6 mm, maximum length ca. 120 mm), sounding within the range C \sharp 6 – C \sharp 7: brilliant, starry, cutting, high-pitched; ca. 10–15" decay. If necessary, randomly-chosen rods from a Mark Tree may be hung in a circle as a substitute for this windchime.

1 Aluminium-Tube Windchime: AW *

This metallic windchime consists of six aluminium alloy (Duralumin?) tubes: 32 mm outer diameter; ca. 1.8 mm gauge. Lengths: **1** – 210 mm; **2** – 220 mm; **3** – 310 mm; **4** – 330 mm; **5** – 402 mm; **6** – 503 mm. The aluminium-tube windchime that was utilized for the world première performance of **Cycles of Vega** produced the following readily perceived pitches (although other, rather more obscure resonances are also present): **1** – B \sharp 6; **2** – A \sharp 6; **3** – B \flat 5; **4** – G \sharp 5; **5** – D \flat 5; **6** – F \sharp 4, [B \sharp 5]. This windchime possesses a brilliant, starry, ‘hard’ sound – slightly crotale-like in timbre, quite loud; ca. 15" decay.

1 Brass-Disc Windchime: BrDW *

This metallic windchime consists of several thin brass discs, not necessarily regular in shape. Their timbre should be clangorous – a high-pitched, extremely resonant and rich sound; ca. 5" decay.

Very Large Tam-Tam: T-T

A very large, resonant tam-tam (at least 1300 mm in diameter, if possible) – very deep, profound and mysterious! Apart from the following cases, strike the tam-tam in its usual, slightly off-centre beating-spot.



Strike the tam-tam at its central point, and strike the tam-tam away from its central point (towards its rim), respectively.

* Windchimes [Percussion 2 only]

Agitate the elements of these windchimes directly, with hand(s) or mallet(s), roughly in accord with the notated waveform contours. All windchime attacks and excitations should be varied as much as possible, subject to the indicated dynamic level.

As a rehearsal- and performance-aid, for easier readability of the numerous windchimes’ notes (i.e. correctly matching these notes to their corresponding windchimes), the noteheads written upon the windchimes’ staves could be colour-coded using a wide variety of highlighter pens or coloured pencils. The percussionist might even consider carefully attaching the associated colour of ribbon or a strip of coloured paper to each windchime somehow; these ribbons or paper-strips must not cause any impedance whatsoever to the windchimes’ typically stochastic acoustical behaviour. (Besides being musically functional props, such visual variegations will help to impart a beneficial ambience of decorativeness and festivity!)

E-FLAT CLARINET FINGERINGS

SINGLE PITCHES AND TRILLS

left hand alone...

SINGLE PITCHES AND TRILLS


left hand alone...

The image shows a handwritten musical score on a single staff. The title 'SINGLE PITCHES AND TRILLS' is written in a box at the top left. Below it, the text 'left hand alone...' is underlined. The notation begins with a treble clef and a key signature of one sharp (F#). The first measure contains a triplet of eighth notes: F#4, G4, and A4. The following measures contain single eighth notes: B4, C5, D5, E5, F#5, G5, A5, and B5. The next measure is a whole note chord consisting of F#4, G4, A4, B4, C5, D5, E5, and F#5. This is followed by a series of measures containing single eighth notes: G5, A5, B5, C6, D6, E6, F#6, and G6. The notation then moves to a lower register, starting with a whole note chord of F#3, G3, A3, B3, C4, D4, E4, and F#4. This is followed by a series of measures containing single eighth notes: G3, A3, B3, C4, D4, E4, F#4, and G4. The notation concludes with a whole note chord of F#3, G3, A3, B3, C4, D4, E4, and F#4.

right hand alone...

general (non-standard) fingerings - both hands...

right hand alone...



Handwritten musical notation for the right hand of "The Entertainer" by Scott Joplin. The notation is on a single staff with a treble clef and a key signature of one sharp (F#). It shows the first 16 measures of the piece. Above the staff, there are handwritten notes and symbols: F#, Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb. To the right of the staff, there are handwritten notes and symbols: F#, Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb, B, Bb. The notation includes various musical symbols such as notes, rests, and bar lines.

KEY VIBRATI

left hand
alone...

right hand
alone

both hands...

[illegible]

left hand alone...

right hand
alone (see
bar 189)

both hands...

MULTIPHONICS

Aside from the self-evident tablature pictographs and symbology, N denotes the normal or standard fingering.

Cycles of Vega

♩ = 134. Wild, vibrant and ecstatic! Rhythmically precise.

Cycles of Vega

1

3 **16**

3 **4**

4 **4**

5 **8**

1.

PERC. 1

PERC. 2

Sleigh

L.H. WC

T-T

Clar.

Crot

Cym

Rin

Vbslp

Vib

Cowb

R.H. WC

tr

accel...

emerging...

f poss!

emphasize B♭

f poss!

p

mp

(mp)

p

T-T

p

c.7"

c.7"

Now hold the multiphonic ABSOLUTELY STEADY — bell-like, well-balanced, non-vibrato! (Merge it with the percussion resonances.)

"Sneak attack": fade in the multiphonic quickly during the percussion flourish (if possible); the multiphonic's onset should be completely obscured.

Percussion: as fast, violent and brilliant as possible — an utterly stinging attack; cover the clarinet multiphonic's onset.

15

5

7

2

3

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

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95

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97

98

99

100

A

4

5
8

7
16

5
16

4
8

e^b clar.

a.f.a.p.

bend

3

ff

f

sfffz

pp!

fast, random key-noises - f poss.

ff: f poss.

Imitate the sound and envelope of the vibraslap.

huh!

p < mf

sfffz

*extremely violent**

gliss.

3

f poss.

ff

Sizz

5:4

mf

★ see Performance Notes, p.xii.

PERC. 1

Vbslp

Vib

Cowb

Cym

PERC. 2

Cym

R.H. WC

Sleigh

L.H. WC

Shw

Sleighb

Baw

Shw

Suw

HW

f poss.

f

p

f

f poss.

f poss.

mp

sfffz

7

4
8

e^b Clar.

f *mp* *p < ff* *pp < f > ppp*

mp < mf

sfz > mf : f : f poss.

pposs. < ff : f > p : pp

sfz

★ extremely brief: a transient overblown squeak, like a very unsteady attack.

huh!

flz

as in bar 5

5
8

PERC. 1

Vbslp

Cowb

Cym

sfz

ffz : mp

sfz

Sizz

5:4

mp

PERC. 2

Cym

R.H. WC

Sleigh

L.H. WC

Susp

5:4

ff

WW

f

BaW

3

mf

SUW

3

f poss.

p

f

ShW

mf

Sleigh

mf

ShW

f poss.

WW

sfz > p

f

Gradually decrease the tempo to ♩ = 65, as indicated,
dispelling the tension. ...

Handwritten musical score for a multi-instrument ensemble, featuring staves for *e^b Clar.*, *PERC. 1*, *PERC. 2*, *R.H.WC*, and *Sleigh L.H.WC*. The score is divided into measures by vertical bar lines, with measure numbers 5, 8, 10, 16, and 17 indicated. The notation includes various musical symbols such as notes, rests, triplets, and dynamic markings (e.g., *sfz*, *mf*, *f*, *ff*, *pp*, *ppp*, *f poss.*, *mp*). Performance instructions and articulation marks are present, including *tr* (trill), *bend*, *gliss.* (glissando), *Susp* (suspension), and *as before...*. Percussion parts are marked with *Vbslp*, *Vib*, *Cowb*, and *Cym*. The *R.H.WC* and *Sleigh L.H.WC* parts include specific rhythmic patterns labeled *Baw*, *Sleighb*, and *SUW*. A tempo change instruction is written above the score: "Gradually decrease the tempo to ♩ = 65, as indicated, dispelling the tension. ...". A boxed letter **B** is placed above the *e^b Clar.* staff in measure 16. A boxed number **4.** is located at the bottom right of the page.

... ♩ = 124 ...

... ♩ = 121 ...

... ♩ = 119 ...

Handwritten musical score for multiple instruments and percussion.

Top Staff (e^b Clar.): Features complex rhythmic patterns, including triplets and sixteenth notes. Dynamics range from *pp* to *sfz*. Includes markings like "bend" and "a.f.a.p.". Above the staff, there are handwritten notes: "R", "C#", "Ab", and "R tr-A".

PERC. 1:

- Vbslp:** Simple rhythmic notation.
- Cowb:** Simple rhythmic notation.
- Cym:** Includes a "Sizz" marking and a "p" dynamic.

PERC. 2:

- Cym:** Includes a "Susp" marking and a "5:4" ratio.
- R.H. WC:** Includes "SUW" and "ShW" markings.
- Sleigh L.H. WC:** Includes "SUW", "WW", and "Sleigh" markings.

Bottom Staff: Features complex rhythmic patterns, including triplets and sixteenth notes. Dynamics range from *pp* to *sfz*. Includes markings like "f: f poss." and "as before...". Above the staff, there are handwritten notes: "R", "C#", "Ab", and "R tr-A".

Measure Markers: 16, 5, 8, 2, 8.

... ♩ = 96 ...

... ♩ = 92 ...

... ♩ = 90 ...

Handwritten musical score for three systems, each spanning measures 26, 27, and 28. The score includes staves for e^\flat Clarinet, Percussion 1, Percussion 2, Right Hand Woodwinds (R.H. WC), and Left Hand Woodwinds (L.H. WC). The time signature is 5/8.

System 1 (Measures 26-28):

- Clarinet:** Measure 26 starts with a mf dynamic and a triplet. Measure 27 has dynamics ppp , mp , ppp , and $\text{p} < \text{mf}$. Measure 28 has dynamics pp , p , ppp , and p . A handwritten note "as before..." is above measure 28.
- Perc. 1:** Measure 26 has a single note with dynamic f . Measure 27 has a triplet of notes with dynamic mf . Measure 28 has a triplet of notes with dynamics mf , mp , and pp . A handwritten note "gliss." is above measure 28.
- Perc. 2:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "5:4" is above measure 28.
- R.H. WC:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "c. 18''" is below measure 28.
- L.H. WC:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "c. 52''" is below measure 28.

System 2 (Measures 26-28):

- Clarinet:** Measure 26 starts with a mf dynamic and a triplet. Measure 27 has dynamics ppp , mp , ppp , and $\text{p} < \text{mf}$. Measure 28 has dynamics pp , p , ppp , and p . A handwritten note "as before..." is above measure 28.
- Perc. 1:** Measure 26 has a single note with dynamic f . Measure 27 has a triplet of notes with dynamic mf . Measure 28 has a triplet of notes with dynamics mf , mp , and pp . A handwritten note "gliss." is above measure 28.
- Perc. 2:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "5:4" is above measure 28.
- R.H. WC:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "c. 18''" is below measure 28.
- L.H. WC:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "c. 52''" is below measure 28.

System 3 (Measures 26-28):

- Clarinet:** Measure 26 starts with a mf dynamic and a triplet. Measure 27 has dynamics ppp , mp , ppp , and $\text{p} < \text{mf}$. Measure 28 has dynamics pp , p , ppp , and p . A handwritten note "as before..." is above measure 28.
- Perc. 1:** Measure 26 has a single note with dynamic f . Measure 27 has a triplet of notes with dynamic mf . Measure 28 has a triplet of notes with dynamics mf , mp , and pp . A handwritten note "gliss." is above measure 28.
- Perc. 2:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "5:4" is above measure 28.
- R.H. WC:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "c. 18''" is below measure 28.
- L.H. WC:** Measure 26 has a triplet of notes with dynamics mp , p , and ppp . Measure 27 has a triplet of notes with dynamics mp , p , and ppp . Measure 28 has a triplet of notes with dynamics mp , p , and ppp . A handwritten note "c. 52''" is below measure 28.

... ♩ = 86 ♩ = 83 ♩ = 81 ...

29 **7** **16** **5** **16** **4** **8**

e^b Clar.

mp > p *p* *< mp* *p* *mp: p* *p poss.* *mp: f poss.* *mp*

tr a.f.a.p. *bend* *3* *3* *3* *3* *as before...* *flz* *hub!*

PERC. 1

Vbslp

Cowb

smfz *mp*

Cym

PERC. 2

Cym

R.H. WC


ShW *3* *SUW* *5:4* *pp* *WW*

Sleigh

L.H. WC

ShW *p* *ppp* *pp* *pp* *3p*

[illegible]

...  = 65. Stable tempo.

- Pause until the Tam-Tam resonance is 'mp' (approximately)

E

R

● ● ○

● ●

○ ○

E

sporadically flick (off) the
E-key, for the duration of the trill.] Rand.

accel...

a.f.a.p.

... mp ∇ mf
cut off suddenly
at the sound of Ch.
(Perc.1).

★ damp the Ch by grasping it strongly with either hand immediately after striking it.

Clar

Shw

ShW

A

f poss.

Shw

Δ

f poss.

$\boxed{T-T} \dots \text{mp dim.}$

12.

... ♩ = 67... ... ♩ = 65. Stable tempo.

Pause until the Tam-Tam resonance is 'mp' (approximately)

E

spontaneously flick (off) the E-key, for the duration of the trill.

accel... a.f.a.p.

... mp < mf
cut off suddenly
at the sound of Ch.
(Perc. 1).

★ damp the Ch by grasping it strongly
with either hand immediately after
striking it.

Clar.

★ ★ attack both ShW simultaneously
at the sound of Ch (Perc. 1).

dim... ... mp dim

Pause until the Tam-Tam resonance is 'pp'

■ FREE DURATIONS. One smooth gesture: react to one another in accordance with the given arrows; well-connected, continuous...

39 ★ *teeth on reed* *scrape* *Rand.* *brilliant: a.f.a.p.*

PERC. 1

Coil *pp* *mp* *pp* *ff!*

Crot *Vib gliss., KBT* *Cowb 2* *sempre*

Vib *Vib, KBT* *brilliant but dry: a.f.a.p.* *fast, raspy.* *non Ped.!! (throughout bar 39)*

Cowb *1* *3* *4* *2* *P* *sffz* *f poss.!*

SHL

Cym

PERC. 2

R.H.WC *Cowb 3* *HW* *sffz*

SHTS *Clar. 'mordent'* *** coordinate precisely with Clar.*

Rin *Clar. reed-scrape* *[KBT]*

Sleigh *mf* *simultaneously with Vib gliss. (Perc. 1).*

L.H.WC *= 65.* *Cowb 2* *[Sleigh]* *3* *mp*

Place Dove between lips: unseen (as much as possible).

38

F

14.

Handwritten musical score for Percussion 1 and Percussion 2.

PERC. 1

- Coil:** 2/8 time signature. Includes a box with "51" and a measure with a grace-note: "on the beat".
- Crot:** 15. Includes a measure with a grace-note: "on the beat".
- Vib:** Includes a measure with a grace-note: "on the beat".
- Cowb:** Includes a measure with a grace-note: "on the beat".
- ShTL:** Includes a measure with a grace-note: "on the beat".
- Cym:** Includes a measure with a grace-note: "on the beat".

PERC. 2

- R.H.WC:** Includes a measure with a grace-note: "on the beat".
- ShTS:** Includes a measure with a grace-note: "on the beat".
- Rin:** Includes a measure with a grace-note: "on the beat".
- L.H.WC:** Includes a measure with a grace-note: "on the beat".

Handwritten Annotations:

- 51:** Boxed number in the top left.
- 2/8:** Time signature in the top left.
- grace-note: "on the beat":** Multiple instances across the score.
- 5:4:** Ratio markings above several measures.
- tr:** Trill markings above several measures.
- a.f.a.p.:** "As fast as possible" markings above several measures.
- poco:** "A little" marking above a measure.
- Ped:** Pedal marking above a measure.
- BrDW:** Boxed markings above several measures.
- BrBW:** Boxed markings above several measures.
- pp, mp, p, pp, ppp:** Dynamic markings throughout the score.
- 3, 5, 6, 7, 8:** Numerical markings above several measures.
- N, R, F:** Markings above a measure in the top right.

57

PERC. 1

Clar. e^b

Coil

Crot

Vib

Cowb

ShTL

Cym

PERC. 2

R.H.WC

ShTS

Rin

L.H.WC

sempre

ppp

5

16

2

8

3

8

pp

ppp

P

pp

mp

bend

poetic

tr-E (or F#)

Rand.

K

5:4

flz

K

very steady

mp: ppp

* K frequency = a simple sub-division of Vib motor rate ①.

①

②

Ped

7:4

Echo

3

BrTW

7:4

ppp

Handwritten musical score for Percussion 1 and Percussion 2, measures 63-67. The score includes staves for e♭ Clarinet, Perc. 1 (Coil, Crot, Vib, Cowb, ShTL, Cym), and Perc. 2 (R.H. WC, ΔWC, ShTS, Rin, L.H. WC). It features various musical notations such as notes, rests, dynamics (ppp, p, mp, mf, poss.), and performance instructions like 'Ped' and 'Begin as soon as the clarinet falls silent'.

Handwritten musical score for Percussion 1 and Percussion 2, featuring various instruments and dynamic markings.

PERC. 1

- Coil:** 11
- Crot:** 15
- Vib:** ③, ②, ④, ① (circled numbers indicating a sequence or pattern)
- Ped:** (Pedal) line
- Cowb:** (Cowbell)
- ShTL:** (Shitl)
- Cym:** (Cymbal)

PERC. 2

- R.H.WC:** (Right Hand Woodblock)
- ShTS:** (Shitl)
- Rin:** (Rin)
- L.H.WC:** (Left Hand Woodblock)

Handwritten Notes and Markings:

- 69:** Measure number in a box.
- 5:4:** Time signature.
- tr-E:** Trill on E.
- 7:4:** Time signature.
- 3:2:** Time signature.
- 3:** Triplet.
- bend:** Bend.
- mf:** Mezzo-forte.
- pp:** Pianissimo.
- mp:** Mezzo-piano.
- flz:** Flute.
- tr-E:** Trill on E.
- 5:4:** Time signature.
- 3:** Triplet.
- flz:** Flute.
- mf:** Mezzo-forte.
- pp:** Pianissimo.
- mp:** Mezzo-piano.
- subito:** Subito.
- 2:** Second.
- 3:** Third.
- pp:** Pianissimo.
- sempre:** Sempre.
- Sizz:** Sizzle.
- Susp:** Sustain.
- ppp:** Pianississimo.
- CW:** Cowbell.
- 3:** Triplet.
- pp:** Pianissimo.
- 5:4:** Time signature.
- 2:** Second.
- 3:** Third.
- pp:** Pianissimo.
- p:** Piano.
- CW:** Cowbell.
- 3:** Triplet.
- pp:** Pianissimo.
- KBT:** Keyboard.
- 3:** Triplet.
- pp:** Pianissimo.
- mp:** Mezzo-piano.
- 3:** Triplet.
- 4:** Fourth.
- mp:** Mezzo-piano.

Handwritten musical score for Percussion 1 and 2. The score is written on a grand staff with multiple staves for different percussion instruments. The notation includes various musical symbols such as notes, rests, beams, and dynamic markings (p, pp, mp, mf, f, ppp). There are also performance instructions and annotations in the margins.

Percussion 1 (PERC. 1):

- Clarinet (e^b Clar.):** Features a 5:4 time signature and a 7:4 time signature. Includes a trill (tr) and a bend. Dynamics range from p to mp.
- Crotales (Crot):** Includes a 15-measure rest and a 3-measure rest.
- Vibraphone (Vib):** Includes a 3-measure rest and a 4-measure rest. Dynamics range from p to pp.
- Cowbell (Cowb):** Includes a 4-measure rest.
- Shitl (ShTL):** Includes a 4-measure rest.
- Cymbal (Cym):** Includes a 4-measure rest.

Percussion 2 (PERC. 2):

- R.H. Woodblock (R.H. WC):** Includes a 3-measure rest.
- Shitl (ShTS):** Includes a 4-measure rest.
- Ring (Rin):** Includes a 4-measure rest.
- L.H. Woodblock (L.H. WC):** Includes a 4-measure rest.

Annotations and Performance Instructions:

- "Emphasize the G⁴ slightly."
- "(tr-G⁴)"
- "bend"
- "poss."
- "mf:f:p"
- "mp:pp"
- "p:ppp"
- "mp"
- "ppp"
- "-Ped"
- "Ch"
- "HW"
- "KBT"

Handwritten musical score for a percussion ensemble, featuring staves for **PERC. 1** (Coil, Crota, Vib, Cowb, ShTL, Cym) and **PERC. 2** (R.H.WC, ShTS, Rin, L.H.WC, T-T). The score includes various musical notations such as notes, rests, and dynamic markings (mf, pp, f, p, ppp, mp, pp, ppp). It also features handwritten annotations like "81", "5", "16", "3", "8", and "21", along with performance instructions like "mf", "pp", "f!", "ppp", "p", "poca", "bend", "Ped", and "T-T". The score is written on a grid of 16 measures, with a final measure marked "21".

Handwritten musical score for Percussion 1 and Percussion 2, featuring various instruments and dynamic markings.

Percussion 1 (PERC.1):

- Coil:** Includes a section marked "q1" with a 5:4 ratio, a "flz" (flute) marking, and a "bend" marking. Dynamics include *mp*, *p*, *f*, *mp*, *p*, *mf*, *pp*, and *mf*.
- Crot:** Includes a section marked "15" and a "PP" marking.
- Vib:** Includes a section marked "6" and "3", a "Ped" (pedal) marking, and a "mp" marking.
- Cowb:** Includes a section marked "5" and "mf".
- ShTL:** Includes a section marked "5" and "mf".
- Cym:** Includes a section marked "Ch" and "mp".

Percussion 2 (PERC.2):

- R.H.WC:** Includes a section marked "3" and "P".
- ShTS:** Includes a section marked "7 3" and "P".
- Rin:** Includes a section marked "1 7 6" and "mp".
- L.H.WC:** Includes a section marked "KBT" and "P".

Other markings and dynamics:

- RA** (Reinforced Acoustic) and **Bb** (B-flat) markings.
- tr-F#** (trill F-sharp) and **K** (key) markings.
- brilliant, agile** (descriptive markings).
- 5 16** and **2 16** (measure numbers).
- 2 8** (measure number).
- 23** (page number).

Handwritten musical score for Percussion 1 and Percussion 2, featuring various instruments and dynamic markings.

Percussion 1 (PERC. 1):

- Coil:** Includes a section marked **103** with dynamics *mf* and *p*. A large number **5** is written above the staff.
- Crot:** Includes a section marked **15** with dynamics *pp*.
- Vib:** Includes a section marked **16** with dynamics *mp* and *pp*. A large number **2** is written above the staff.
- Cowb:** Includes a section marked **8** with dynamics *ppp*.
- ShTL:** Includes a section marked **3** with dynamics *f*, *p*, *mp*, *p*, *pp*, *mf*, and *f*.
- Cym:** Includes a section marked **8** with dynamics *ppp*.

Percussion 2 (PERC. 2):

- R.H.WC:** Includes a section marked **5** with dynamics *mp* and *pp*.
- ShTS:** Includes a section marked **16** with dynamics *mp* and *pp*.
- Rin:** Includes a section marked **8** with dynamics *ppp*.
- L.H.WC:** Includes a section marked **3** with dynamics *f*, *p*, *mp*, *p*, *pp*, *mf*, and *f*.

Other Instruments and Markings:

- e^b Clar.:** Includes a section marked **103** with dynamics *mf* and *p*.
- Flz:** Includes a section marked **15** with dynamics *pp*.
- RA:** Includes a section marked **16** with dynamics *mp* and *pp*.
- N:** Includes a section marked **8** with dynamics *ppp*.
- tr-F:** Includes a section marked **3** with dynamics *f*, *p*, *mp*, *p*, *pp*, *mf*, and *f*.
- Rand. K:** Includes a section marked **8** with dynamics *ppp*.
- bend:** Includes a section marked **3** with dynamics *f*, *p*, *mp*, *p*, *pp*, *mf*, and *f*.
- poetic...:** Includes a section marked **15** with dynamics *pp*.
- echo:** Includes a section marked **16** with dynamics *mp*.
- CW:** Includes a section marked **8** with dynamics *ppp*.

Dynamic Markings: *mf*, *p*, *pp*, *ppp*, *f*, *mp*, *pp*, *mf*, *f*.

Tempo/Speed Markings: *mf: p < > poco*, *mf: p < > poco*.

Rehearsal Marks: **5**, **16**, **2**, **8**, **3**.

Other Notations: *flz*, *RA*, *N*, *tr-F*, *Rand. K*, *bend*, *poetic...*, *echo*, *CW*, *mf*, *pp*, *ppp*, *f*, *mp*, *pp*, *mf*, *f*.

Handwritten musical score for a percussion ensemble. The score is written on a grand staff with multiple staves for different instruments and percussion parts.

Key Signature and Tempo: The key signature changes to B♭ major (two flats). The tempo is marked as "51..." and "52...".

Instrumentation:

- e♭ Clar.:** E-flat Clarinet.
- PERC. 1:** Percussion 1, including Coil, Crot (Crochets), Vib (Vibraphone), Cowb (Cowbell), ShTL (Shaver/Tam), and Cym (Cymbal).
- PERC. 2:** Percussion 2, including R.H.WC (Right Hand Woodblock), ΔWC (Delta Woodblock), ShTS (Shaver/Tam), Rin (Rim), and L.H.WC (Left Hand Woodblock).

Notation and Dynamics:

- Notes and Rhythms:** The score includes various note values, rests, and rhythmic patterns. Some measures are marked with large numbers (3, 2, 8, 16) indicating specific rhythmic values or counts.
- Dynamics:** Dynamics range from *ppp* (pianississimo) to *f* (forte). Specific markings include *mf* (mezzo-forte), *mp* (mezzo-piano), *f:mp*, *pp* (pianissimo), and *mf:mp*.
- Performance Instructions:** Instructions include "Ped" (Pedal), "bend" (bend), "tr" (trill), "huh!" (hum), and "poco" (poco).
- Key Signature Change:** The key signature changes to B♭ major (two flats).

Structure: The score is divided into measures, with some measures containing large numbers (3, 2, 8, 16) and others containing smaller numbers (3, 2, 8, 16). The score is written in a clear, legible hand.

[illegible]

Handwritten musical score for a 12-piece ensemble, featuring a 5:4 time signature. The score is divided into two main sections, 121 and 122, with a tempo change from 57 to 58. The instruments are arranged in two percussion sections (PERC. 1 and PERC. 2) and a main ensemble section. The main ensemble includes Eb Clarinet, Crotchet, Vibraphone, Cowbell, Shitl, Cymbal, R.H. Woodblock, Shitl, Rin, and L.H. Woodblock. The score includes various musical notations such as notes, rests, dynamics (p, mf, mp, pp), articulation (accents, slurs), and performance instructions (e.g., "Emphasize the G# slightly", "Change fingering for the pitch-bend, if necessary"). The score is written on a grand staff with multiple staves for each instrument.

... ♯ = 59 ...

... ♯ = 60 ...

... ♯ = 61 ...

Handwritten musical score for Percussion 1 and Percussion 2, measures 127-130. The score includes staves for Eb Clarinet, Perc. 1 (Coil, Crot, Vib, Cowb, ShTL, Cym), and Perc. 2 (R.H.WC, ShTS, Rin, L.H.WC, T-T). It features various musical notations such as notes, rests, dynamics (ppp, mp, mf, f), and performance instructions like 'Ped' and 'bend'.

H

... = 62 = 63 = 64 ... R tr-F ... = 65 ...

132

e^b Clar.

PERC. 1
Coil

Crot

Vib*

Ped

Cowb

ShTL

Cym

PERC. 2
R.H.WC

ShTS

Rin

Sleigh L.H.WC

* Rand. vibrato: ① ↔ ⑥; on/off.
React to clarinet vibrati till letter J (i.e. bar 180).

mf mp p < f pp mf flz bend p < f mf < sfz: p mf: p < f ff > p sfz: p < mp

flz K flz

3 5 4 Ch 3p

BrTW ShW Sleigh CW

f poss. f poss. f mp f poss.

Handwritten musical score for a percussion ensemble, featuring multiple staves and various musical notations.

Top Staff (e^b Clar.): Contains melodic lines with dynamic markings (ppp, mf, p, f, mp, sfz, ff, p, mf, p, f, mp, ppp, sfz: p, mf, p, f, mp, p, sfz, p) and performance instructions (bend, choppy, brilliant, agile, J, R, F#). Measure numbers 137, 15, 16, 2, 8 are indicated.

PERC. 1:

- Coil:** 15
- Crot:** 15
- Vib:** 15
- Cowb:** 15
- SHIL:** 15
- Cym:** 15

PERC. 2:

- R.H.WC:** 15
- SHI'S:** 15
- Rin:** 15
- L.H.WC:** 15

Other Notations: Includes measure numbers (66, 67, 68, 69, 70), dynamic markings (ppp, mf, p, f, mp, sfz, ff, p, mf, p, f, mp, ppp, sfz: p, mf, p, f, mp, p, sfz, p), and performance instructions (bend, choppy, brilliant, agile, J, R, F#).

[illegible]

Handwritten musical score for a percussion ensemble, featuring a variety of instruments and complex rhythmic notation.

Top Staff: *e^b Clar.* (E-flat Clarinet). Includes a tempo change to 76... and a section marked 149. The notation includes a 5:4 ratio, a bend, and a 2:8 ratio.

PERC. 1: *Coil*, *Crot*, *Vib*, *Cowb*, *ShTL*, *Cym*. Includes a 15-measure rest for the Coil and a 5:4 ratio for the Crot.

PERC. 2: *R.H.WC*, *SHTS*, *Rin*, *L.H.WC*. Includes a 5:4 ratio for the SHTS and a 7:4 ratio for the Rin.

Other Notation: The score includes various musical symbols such as notes, rests, and dynamic markings (mf, mp, f, ff). It also features a large number 516 in the center, a 2:8 ratio, and a 3:8 ratio. The bottom right corner includes a box labeled KBT and a 7:4 ratio.

... = 83 ...

... = 85 ...

... = 87 ...

... = 88 ...

... = 89 ...

... = 90 ...

155

e^b Clar.

PERC. 1
Coil

Crot

Vib

Cowb

ShTL

Cym

PERC. 2

R.H.WC

ShTS

Rin

L.H.WC

Handwritten musical notation for e^b Clar. and PERC. 1. Includes notes, rests, and dynamic markings like *sfz:mp* and *ff*. A bracketed section is labeled "3".

3
16

2
8

Handwritten musical notation for e^b Clar. and PERC. 1. Includes notes, rests, and dynamic markings like *ff* and *mp*. A bracketed section is labeled "3".

Handwritten musical notation for Crot and Vib. Includes notes, rests, and dynamic markings like *mf* and *mp*. A bracketed section is labeled "3".

Handwritten musical notation for Crot and Vib. Includes notes, rests, and dynamic markings like *mf* and *ff*. A bracketed section is labeled "3".

Handwritten musical notation for Crot and Vib. Includes notes, rests, and dynamic markings like *ff* and *mp*. A bracketed section is labeled "3".

Handwritten musical notation for Cowb, ShTL, and Cym. Includes notes, rests, and dynamic markings like *ff* and *f*. A bracketed section is labeled "3".

Handwritten musical notation for Cowb, ShTL, and Cym. Includes notes, rests, and dynamic markings like *ff* and *f*. A bracketed section is labeled "3".

Handwritten musical notation for Cowb, ShTL, and Cym. Includes notes, rests, and dynamic markings like *ff* and *f*. A bracketed section is labeled "3".

Handwritten musical notation for PERC. 2. Includes notes, rests, and dynamic markings like *f* and *mp*. A bracketed section is labeled "3".

Handwritten musical notation for PERC. 2. Includes notes, rests, and dynamic markings like *f* and *mp*. A bracketed section is labeled "3".

Handwritten musical notation for PERC. 2. Includes notes, rests, and dynamic markings like *f* and *mp*. A bracketed section is labeled "3".

... = 92 ...

... = 94 ...

... = 96 ...

... = 97 ...

... = 99 ...

Becoming extremely brilliant,
infinitely tense and violent...

Handwritten musical score for Percussion 1 and Percussion 2. The score is divided into two main sections: PERC. 1 and PERC. 2.

PERC. 1:

- Clarin.** (Clarinet): Features complex rhythmic patterns with time signatures (5:4, 3, 7:4, 3:2, 5:4) and dynamic markings (f, p, mf, f poss., fff, mf:mp:f:p<ff, poco, p). Includes performance instructions like "flz", "tr-E", "bend", and "high!".
- Coil**
- Crot**
- Vib** (Vibraphone): Includes a "Ped" (pedal) instruction.
- Cowb** (Cowbell)
- ShTL** (Shaver/Tam-tam)
- Cym** (Cymbal): Includes a "Sizz" (sizzle) marking and "mp/mf" dynamics.

PERC. 2:

- R.H.WC** (Right Hand Woodblock): Includes a "ΔWC" (triangle woodblock) marking and "mp" dynamics.
- ΔWC**
- ShTS** (Shaver/Tam-tam)
- Rin** (Rim)
- L.H.WC** (Left Hand Woodblock): Includes a "CW" (cymbal) marking and "f poss." dynamics.

The score includes various musical notations such as notes, rests, and dynamic markings, along with performance instructions like "flz", "tr-E", "bend", "high!", "Sizz", and "Ped".

[illegible]

... = 114... ... = 117... ... = 120... ... = 123... ... = 126... ... = 127... Cataclysmic!

PERC. 1

PERC. 2

PERC. 3

PERC. 4

PERC. 5

PERC. 6

PERC. 7

PERC. 8

PERC. 9

PERC. 10

PERC. 11

PERC. 12

PERC. 13

PERC. 14

PERC. 15

PERC. 16

PERC. 17

PERC. 18

PERC. 19

PERC. 20

PERC. 21

PERC. 22

PERC. 23

PERC. 24

PERC. 25

PERC. 26

PERC. 27

PERC. 28

PERC. 29

PERC. 30

PERC. 31

PERC. 32

PERC. 33

PERC. 34

PERC. 35

PERC. 36

PERC. 37

PERC. 38

PERC. 39

PERC. 40

PERC. 41

PERC. 42

PERC. 43

PERC. 44

PERC. 45

PERC. 46

PERC. 47

PERC. 48

PERC. 49

PERC. 50

PERC. 51

PERC. 52

PERC. 53

PERC. 54

PERC. 55

PERC. 56

PERC. 57

PERC. 58

PERC. 59

PERC. 60

PERC. 61

PERC. 62

PERC. 63

PERC. 64

PERC. 65

PERC. 66

PERC. 67

PERC. 68

PERC. 69

PERC. 70

PERC. 71

PERC. 72

PERC. 73

PERC. 74

PERC. 75

PERC. 76

PERC. 77

PERC. 78

PERC. 79

PERC. 80

PERC. 81

PERC. 82

PERC. 83

PERC. 84

PERC. 85

PERC. 86

PERC. 87

PERC. 88

PERC. 89

PERC. 90

PERC. 91

PERC. 92

PERC. 93

PERC. 94

PERC. 95

PERC. 96

PERC. 97

PERC. 98

PERC. 99

PERC. 100

PERC. 101

PERC. 102

PERC. 103

PERC. 104

PERC. 105

PERC. 106

PERC. 107

PERC. 108

PERC. 109

PERC. 110

PERC. 111

PERC. 112

PERC. 113

PERC. 114

PERC. 115

PERC. 116

PERC. 117

PERC. 118

PERC. 119

PERC. 120

PERC. 121

PERC. 122

PERC. 123

PERC. 124

PERC. 125

PERC. 126

PERC. 127

PERC. 128

PERC. 129

PERC. 130

PERC. 131

PERC. 132

PERC. 133

PERC. 134

PERC. 135

PERC. 136

PERC. 137

PERC. 138

PERC. 139

PERC. 140

PERC. 141

PERC. 142

PERC. 143

PERC. 144

PERC. 145

PERC. 146

PERC. 147

PERC. 148

PERC. 149

PERC. 150

PERC. 151

PERC. 152

PERC. 153

PERC. 154

PERC. 155

PERC. 156

PERC. 157

PERC. 158

PERC. 159

PERC. 160

PERC. 161

PERC. 162

PERC. 163

PERC. 164

PERC. 165

PERC. 166

PERC. 167

PERC. 168

PERC. 169

PERC. 170

PERC. 171

PERC. 172

PERC. 173

PERC. 174

PERC. 175

PERC. 176

PERC. 177

PERC. 178

PERC. 179

PERC. 180

PERC. 181

PERC. 182

PERC. 183

PERC. 184

PERC. 185

PERC. 186

PERC. 187

PERC. 188

PERC. 189

PERC. 190

PERC. 191

PERC. 192

PERC. 193

PERC. 194

PERC. 195

PERC. 196

PERC. 197

PERC. 198

PERC. 199

PERC. 200

PERC. 201

PERC. 202

PERC. 203

PERC. 204

PERC. 205

PERC. 206

PERC. 207

PERC. 208

PERC. 209

PERC. 210

PERC. 211

PERC. 212

PERC. 213

PERC. 214

PERC. 215

PERC. 216

PERC. 217

PERC. 218

PERC. 219

PERC. 220

PERC. 221

PERC. 222

PERC. 223

PERC. 224

PERC. 225

PERC. 226

PERC. 227

PERC. 228

PERC. 229

PERC. 230

PERC. 231

PERC. 232

PERC. 233

PERC. 234

PERC. 235

PERC. 236

PERC. 237

PERC. 238

PERC. 239

PERC. 240

PERC. 241

PERC. 242

PERC. 243

PERC. 244

PERC. 245

PERC. 246

PERC. 247

PERC. 248

PERC. 249

PERC. 250

PERC. 251

PERC. 252

PERC. 253

PERC. 254

PERC. 255

PERC. 256

PERC. 257

PERC. 258

PERC. 259

- Pause until the overall dynamic of the Percussion resonances is 'mf' (approximately)

PERC. 1

Coil

Crot

Vib

Cowb

ShTL

Cym

PERC. 2

R.H.WC

ShTS

Rin

L.H.WC

Annotations:

- PERC. 1:** 2, 8, 15, Ped, c.5", c.2", (dim...), p pass.: mp, bend, End Rand.vibrato.
- PERC. 2:** BrBW, mf, c.2", (dim...), f pass., BrTW, c.1'08", c.6'46", c.11", c.6'57".
- Star Annotation:** ★ Cease agitation of the Shan Tubes: random attacks amongst them will certainly occur well beyond letter J (bar 180)!

$\left[\text{quarter} = \text{quarter} \right] \text{ } \text{♩} = 67$. Starry and shimmering: dynamically well-balanced; precise; very intense, but becoming more and more mellow. Decrease the tempo to $\text{♩} = 40$, as indicated, dispelling the tension....

... $\text{♩} = 66 \dots$... $\text{♩} = 64 \dots$... $\text{♩} = 62 \dots$... $\text{♩} = 61 \dots$... $\text{♩} = 60 \dots$

J
180
 e^b Clar. **2**
 8 *sfz: mp < ff* *f* *mf* *mf: f* **3**
 8 *also include oo fleetingly - a loud G#.* *bend* *p* *< >* *poco* *ff* *sfz: p* **2**
 8 *tr-any* *Rand. ** *Rand. [request to Vib vibrato as you wish]* *huh!* *7:4* *5:4* *bend* *mf* **2**
 16 *3* *sempre* *mf* *f* *7:4* *ff* *fff* *Susp* *Ped* *ff* *gently agitate* *mp* *mp* *mf* **2**
 8 *PERC. 1* *Coil* *Tri* *15* *5* *7:4* *ff* *fff* *Cym* *mf* *mp* *6* *5* *3* *4* *6* *7* *6* *mp*

[illegible]

... ♩ = 48 ...

... ♩ = 47 ...

... ♩ = 46 ...

Handwritten musical score for Percussion 1 and Percussion 2.

Percussion 1 (PERC. 1): Includes parts for Coil, Tri, Crot, Vib, Ped, and Cym.


Percussion 2 (PERC. 2): Includes parts for Rin and Cym.

Key markings and annotations:

- 198:** Boxed number at the start of the first staff.
- Rand.:** Randomization markings above the first staff.
- mf: p, mp, p, pp, p poss.:** Dynamic markings for the first staff.
- 5:4:** Time signature change.
- bend:** Bending instruction.
- ★ See bar 189.** Reference to another bar.
- L:** Large letter marking.
- tr - any:** Trill instruction.
- Rand. as in bars 180-181:** Reference to previous bars.
- sfz: ppp < p > pp > ppp:** Dynamic markings for the first staff.
- bend:** Bending instruction.
- 3 = 8:** Large number marking.
- 7:4 F:** Time signature and key signature change.
- pp, mp, p:** Dynamic markings for the first staff.
- Ped:** Pedal instruction.
- Ch:** Chord instruction.
- pp:** Dynamic marking for the first staff.
- 7:4 F:** Time signature and key signature change.
- mp, p:** Dynamic markings for the first staff.
- 3, 5, 3:** Rhythmic markings for the second staff.
- 1, 2, 5, 3, 6:** Rhythmic markings for the second staff.
- c. 27", c. 7'46":** Time markings for the second staff.
- p, ppp:** Dynamic markings for the second staff.

An (uncoordinated) interruption in the process, like a brilliant, blinding, coruscative wave of light!

43.

...  = 40. Stable tempo.

44

J. J. Shatalov. Sydney, Australia, 28 September 1991.
(This score copied January - March 2002.)

Cycles of Vega

-To Eric Gross and Peter Sculthorpe.
-For Ros Dunlop, Daryl Pratt and Tony
Cowdroy to play.

† Maintain your physical attitude
for approximately ten seconds:
do not move until all other
resonances are lost in the distance
then relax!

Pause until the Tam-Tam resonance is 'ppp' (approximately) $\bullet = 40$.

215 $\bullet = 40$. m^3 K pure $\text{ppp} \dots (\text{absolutely steady!})$

5 **16** $\text{p} \text{ poss.}$ $\text{flz} \text{ huh!}^{\star}$ (N) $\text{c. } 10''^{\dagger}$ $\geq 9'$

5 **32** \star answer and imitate the
(envelope of) the vibroslap.
 \blacksquare suddenly pull the mouth-
piece from between the lips.

PERC. 1
Coil
Tri
Crot
Vib
Cowb

PERC. 2
Vbslp
RH.WC
L.H.WC
T-T

$\bullet = 40$. HW KBT echo ppp furlively: ; take up Vbslp. mf! 'insistent' $\text{if necessary, damp the Vbslp against your chest.}$ $\text{c. } 10''^{\dagger}$ $\text{c. } 26''$

45. FINE.